

REMARKS

Claims 1-3, 9-17, 24-29 and 32 are pending and stand ready for action on the merits. Claims 12, 14, 17, 27 and 28 have been withdrawn from consideration as being drawn to non-elected subject matter.

Issues Under 35 U.S.C. 103

Claims 1-3, 9-11, 13, 15, 16¹, 18, 24-26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramaswamy et al. in view of Yoshida. Applicants respectfully traverse the rejection.

Cited Tertiary References Do Not Cure Deficiency In Rejection:

The deficiency recognized by the Examiner in the teachings of Ramaswamy et al. and Yoshida is that none of these references explicitly teach that the manganese dioxide has a surface area of greater than 50 m²/g, as presently claimed. The Examiner cites Otsuka et al., U.S. 6,447,576 (see e.g., column 2, lines 48-50) and Hoke et al., U.S. Patent Application Publication 2001/0031693 (see e.g., paragraph [0077]) for teaching that manganese dioxide having a specific surface area of greater than 50 m²/g is "well known in

¹ The Examiner appears to have made a mistake by indicating that claim 16 is included in the rejection. The Examiner is respectfully requested to clarify this matter in the next communication.

the art." The Examiner alleges that since they are "well known in the art," it would be obvious to one skilled in the art to utilize these higher specific surface area forms in the gas generant composition of Ramaswamy et al.

Applicants respectfully submit that the Examiner has not performed a proper analysis under 35 U.S.C. 103. A proper obviousness inquiry under 35 U.S.C. § 103(a) requires consideration of three factors: (1) the prior art reference (or references when combined) must teach or suggest all the claim limitations; (2) whether or not the prior art would have motivated or suggested to those of ordinary skill in the art that they should make the claimed invention; and (3) whether the prior art establishes that in making the claimed invention, there would have been a reasonable expectation of success.²

The main problem with the Examiner's analysis is that there would be no motivation or suggestion to those of ordinary skill in the art to make the claimed invention as required by factor (2). Applicants note that the references of Otsuka et al. and Hoke et al. do not teach gas generant compositions. Accordingly, the skilled artisan would not be motivated to look to the teachings of

² See *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (citing *Great A. & P. Tea Co. v. Supermarket Equip. Co.*, 340 U.S. 147, 155, 87 USPQ 303, 309 1950)); *In re Donaldson Co.*, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) (*in banc*); *Texas Instruments Inc. v. United States Int'l Trade Comm'n*, 26 USPQ2d 1018, 1028 (Fed. Cir. 1993)).

Otsuka et al. and Hoke et al. to modify the gas generant compositions of Ramaswamy et al./Yoshida.

Otsuka et al. describe steps to prepare the manganese dioxide having a high surface area. However, Otsuka et al. use the manganese dioxide in a cleaning process wherein manganese oxide is combined with an organometallic compound: $Rm-M-Hn$. This includes an alkyl group of Rm and for this reason causes incomplete combustion, providing difficulty in purification of the generated gas.

Similarly, we note that Hoke et al. teach the use of HSAMD in a different type of application than Ramaswamy et al. and Yoshida. Specifically, Hoke et al. teach that the HSAMD is useful in a catalyst to clean vehicle exhaust. Hoke et al. use, [0019], manganese oxide to remove ozone. The reference is not relevant to the invention since it is not involved in the generation of ozone. Hoke et al. use, [0021], a metal oxide support, appearing to include manganese oxide in scope, to remove CO. The metal oxide is used at ambient temperatures, and in sections [0031]-[0034] up to 450°C. This shown temperature is much lower than that of the present invention, around 2000°C, usually applied in the art of

airbag. The catalyst must work effectively for a time period of ten milliseconds.

The mere fact it is possible for isolated disclosures to be combined does not render the result of that combination obvious absent a logical reason of record which justifies the combination. *In re Regel et al.* (CCPA 1975) 526 F2d 1399, 188 USPQ 136. To properly combine references to reach a conclusion of obviousness, there must be some teaching, suggestion of inference in either or both of the references, or knowledge generally available to one of ordinary skill in the art, *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Interfer. 1993), which would have led one to combine the relevant teachings of the two references. *Ashland Oil Inc. v. Delta Resins and Refractories, Inc. et al.* (CAFC 1985) 776 F2d 281, 227 USPQ 657. Both the suggestion to make the claimed composition or device or carry out the claimed process and the reasonable expectation of success must be founded in the prior art, not in Applicant's disclosure. *In re Vaeck* (CAFC 1991) 947 F2d 488, 20 PQ2d 1438. The combination is improper if one of the references is non-analogous art. *In re Clay* (CAFC 1992), 23 PQ2d 1058.

In short, Otsuka et al. and Hoke et al. do not relate to the art of air bag in which the burning temperature is around 2000°C

and the catalyst must work effectively for a time period of ten milliseconds.

As such, the Examiner's rejection is not tenable.

On a side note, Hoke et al. teach that HSAMD can be prepared using the synthesis technique of: a) O'Young et al., US 5,340,562; b) O'Young, "Hydrothermal Synthesis...", 1991; and c) McKenzie, "Synthesis of Birnessite...", Mineralogical Magazine, December 1971. See paragraph [0077] of Hoke et al. Upon review of documents a)-c), Applicants note that none of these documents teach that the HSAMD is useful in gas generant compositions. Accordingly, the same problem is present for Hoke et al., i.e., the documents a)-c) do not cure the deficiencies in the Examiner's rejection based on Ramaswamy et al. and Yoshida.

Yoshida Teaches Away From Ramaswamy et al.:

Applicants respectfully submit that Yoshida teaches away from the present invention, contrary to the Examiner's assertion. The Examiner cites Yoshida for teaching that Yoshida recognizes "the problem that occurs to shock sensitivity when manganese dioxide is used as the main oxidizer". The Examiner has interpreted Yoshida as providing motivation to use high surface area MnO₂.

On the contrary, Yoshida shows, in column 2, lines 49 to 56, that manganese oxide disclosed in the prior art is rich in shock sensitivity and is not desirable from the viewpoint of safety and provides a gas-generating composition having shock sensitivity being equivalent to or lower than a sodium azide composition. This showing is opposite to such an increase of the surface area of manganese oxide so as to increase shock sensitivity.

In determining the scope and content of the prior art, and determining whether the prior art suggested the claimed invention, the references "must be read as a whole and consideration must be given where the references diverge and teach away from the claimed invention." *Akzo N.V. v. United States Int'l Trade Comm'n*, 1 USPQ2d 1241, 1246 (Fed. Cir. 1986); *In re Fine*, 5 USPQ2d 1596, 1598-99 (Fed. Cir. 1988).

As such, the Examiner's rejection is not tenable.

Based on the foregoing, a *prima facie* case of obviousness can not be said to exist, and Applicants respectfully request the rejection be withdrawn.

Clarification Requested:

On a separate matter, Applicants note that the Examiner has made a statement on page 3, lines 6-7 of the outstanding Office Action which Applicants request clarification. Specifically, the Examiner states "the particles recited [in Ramaswamy et al.] may, indeed meet this condition." The Examiner appears to be taking the position that the particles of Ramaswamy et al. may inherently have a surface area characteristic of more than 50 m²/g, as presently claimed.

Applicants respectfully submit that the Declaration by Mr. Tomiyama (enclosed with Applicants' February 5, 2003 Amendment), is sufficient evidence that the manganese dioxide particles of Ramaswamy et al. do not inherently have the surface area characteristics of more than 50m²/g, as presently claimed. Applicants respectfully request that if the Examiner is taking the position that Ramaswamy et al. inherently have this surface characteristics, as presently claimed, the Examiner should indicate what deficiencies the Examiner believes are present in the Declaration by Mr. Tomiyama.

Allowable Subject Matter

Applicants note with appreciation that the Examiner has indicated claim 16 as containing allowable subject matter.

Claim 32

Applicants note that the Examiner has indicated that claim 32 is pending; however, the Examiner has not indicated whether claim 32 is rejected or objected to. Applicants request clarification in the next communication.

PTO-892 Form

Applicants note that the Examiner has cited certain references without clarifying why the references have been cited (background art?). Specifically, the Examiner has not indicated why the references A, B, F and G on the PTO-892 Form enclosed with the August 5, 2002 Office Action nor why the references on the PTO-892 Form enclosed with the outstanding Office Action (dated June 30, 2003), were cited. Applicants request clarification in the next communication.

Priority Documents

The Examiner has not acknowledged whether the instant Priority Documents have been received. Applicants respectfully request clarification in the next communication.

Conclusion


In view of the above comments, Applicants respectfully submit that the claims are in condition for allowance. A notice to such effect is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen (Reg. No. 43,575) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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